UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

Mr. Frank Condrick
Environmental Affairs Manager
Horsehead Corporation
300 Frankfort Road
Monaca, Pennsylvania 15061

Re: EPA Inspection of Horsehead Plant

Dear Mr. Condrick:

Enclosed with this letter is the inspection report for EPA's January 29, 2014 inspection of your Palmerton, PA. plant in regard to air program requirements. Thank you for your cooperation and assistance during EPA's inspection of your air emission sources. If you should care to comment on the report for any inaccuracies, please do so. EPA appreciates your continued diligence in maintaining compliance with all applicable regulations. Please maintain a close working relationship with the State personnel for inspections and permitting. If you should have any comments or questions in regard to this inspection, do not hesitate to contact James Hagedorn, of the Air Protection Division, at (215) 814-2161.

Sincerely,

Zelma Maldonado, Associate Director
Office of Air Enforcement and Compliance Assistance

Cc: Tara Redding, PaDEP-Bethlehem Office

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1650 Arch Street
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DATE : 2-5-14

SUBJ: Inspection Report of Horsehead plant in Palmerton, Pennsylvania

FROM: James Hagedorn, Environmental Scientist, Air Enforcement

Erin Willard, Environmental Scientist, Air Enforcement

VIA: Zelma Maldonado, Associate Director, Office of Air Enforcement and Compliance Assistance
and
File Room

Mailing Address

Horsehead Corporation
900 Delaware Avenue
Palmerton, Pennsylvania 18071

EPA Enforcement Personnel

Jim Hagedorn, Environmental Scientist, EPA, (215) 814-2161
Erin Willard, Environmental Scientist, EPA, (215) 814-2152

Pennsylvania Dept. of Environmental Protection Personnel

Tara Redding, Air Quality Program, Bethlehem Office, (610) 861-2074

Personnel from Horsehead

Tim Basilone, Environmental Affairs (Pittsburgh Office), (724) 773-2223
Don Smith, Palmerton Plant Environmental Contact, (610) 826-8636
Frank Condrick, Environmental Affairs (Pittsburgh Office), (724) 494-8066

Date of Inspection: 1/29/14. EPA arrived on site at about 9:00 am.

Background

EPA conducted a full compliance air inspection of the Horsehead Corporation plant in Palmerton, Pennsylvania (Facility) on January 29, 2014. This plant contains kilns, conveyor belts, and associated equipment for the production of crude zinc oxide and lead chloride. The feed material is electric arc furnace dust collected in baghouses at various steelmaking plants. This was an announced inspection and certain information was requested by EPA for review while in the facility. During the opening meeting, EPA inspectors were told that the #5 kiln was shutdown for maintenance and would not be operational. Horsehead's Palmerton plant has been subject to cleanup under EPA's Superfund program and has been subject to enforcement activity under various EPA regulations and programs. This plant operates 24 hours per day and seven days per week and has a total of 140 employees who are covered by the United Steelworkers Union. Mike Foster is the Plant Manager here in Palmerton and Jim Henster is the President and Chief Executive Office of Horsehead. Horsehead came out of bankruptcy in 2003.

Overview

Jim Hagedorn (the lead EPA investigator) and Erin Willard, also an inspector with the Air Protection Division, arrived on-site at about 9:00 am. Also invited was Tara Redding who works for the Bethlehem, Pa. office of the Pennsylvania Department of Environmental Protection and has been the plant inspector for the State. Shortly after arrival, EPA was escorted to a conference room for a detailed discussion of the inspection and agenda. EPA inspectors identified themselves to the plant personnel and presented their EPA credentials and identification. Mr. Hagedorn told the Horsehead personnel that EPA was on-site to perform a comprehensive investigation of their facility for compliance with the Clean Air Act at the emission sources located within the Palmerton plant. Mr. Hagedorn explained that we were looking at their compliance with all applicable air regulations (NSPS, PSD, NSR, MACT, NESHAPs, their permit, etc). The Horsehead facility was targeted for inspection due to heavy metal emissions, ambient air monitoring results, to verify the emission rates, and to determine compliance with the permit limitations. EPA emailed a message to Horsehead on January 14, 2014 requesting that they have some documents available during the inspection dealing with the processes, equipment, and emissions at the Palmerton, PA plant.

I explained that EPA Region III oversees the air programs in 5 states (Pennsylvania, Maryland, Virginia, Delaware, and West Virginia) as well as the District

of Columbia.

I indicated we wanted to discuss the Facility operations initially and then to physically examine the facilities and other air emission points. I further indicated that we wanted to take some photographs of the Facility and that we would supply Horsehead with a copy of the photos for their review. If they thought any of the photos were Confidential Business Information (CBI), we would mark them as such and treat them as such. EPA took numerous pictures of equipment while outside of plant buildings but our access to equipment on the inside of buildings was limited/not available due to a respirator requirement. The Company personnel indicated that Horsehead made respirator usage mandatory in much of the plant. I also indicated that I would be writing an inspection report when I returned to EPA so that if any discussion was to be considered CBI, please let me know so my report might reflect that. I noted that I would send a copy of my inspection report to Horsehead within about 6 weeks. The Company did claim business confidentiality for all the photos taken in the plant. A copy of the pictures was supplied to Horsehead prior to EPA's departure on January 29, 2014. An agreement was made for Horsehead to contact EPA on the CBI status of the pictures after their review of the photos.

During this inspection, EPA reviewed with the Horsehead personnel some of the information requested in our original email and the Company provided some hard copy information for EPA review. A box of information was received by EPA Region III from Horsehead on Monday, February 10, 2014. The information submitted will be reviewed in detail shortly. Some of that information was taken by EPA during the inspection. At the conclusion of the inspection, EPA indicated that we may be contacting the Company for more information regarding any remaining issues. Any written responses and documentation provided by this Company will be filed in EPA's file room under Horsehead Corporation in Palmerton, PA at the conclusion of EPA's investigation. The Company's oral responses are noted in this report.

Inspection Highlights

The following information pertains to the Horsehead facility in Palmerton, PA as it's noted in the following paragraphs, as was provided to EPA by personnel from Horsehead on January 29, 2014 :

1. The personnel at the initial meeting with the Company were the individuals noted at the start of this report. Don Smith has been working at this site for 48 years. This plant was made up of an east plant and a west plant but the west plant was shutdown at the time of the inspection. Tim Basilone started with Horsehead in 2010 after working for

both Koppers Company and Westinghouse. Tara Redding has been with the PaDEP for two years working in the Bethlehem, Pa. office. Frank Condrick previously worked for the PaDEP for 14 years, spent 6 years with Alcoa Corporation, and has now been with Horsehead for 6 months. Both Tim Basilone and Frank Condrick are with Horsehead's environmental affairs department in Pittsburgh, Pa. (Robinson Township) while Don Smith handles environmental issues at the Palmerton plant specifically. Erin Willard and Jim Hagedorn are with the Philadelphia Regional Office of EPA. Horsehead Holding Company is the parent company located in Pittsburgh, Pa.

2. The plant is operating under a 2004 Title V permit, permit number 13-00001, but has an application into the PaDEP for a new Title V permit which will incorporate all equipment from both Zinc Corporation of America and Horsehead located on this plant property. The effective permit includes restrictions on visible emissions, fugitive emissions, odors, criteria pollutant emission limits, emission statement submission requirements, along with monitoring and recordkeeping requirements.

3. Horsehead has been sending material to the Monaca, Pa. plant for zinc reclamation for a long time but the Monaca, Pa. plant will be shutdown, due to issues meeting the lead National Ambient Air Quality Standard , by 10-31-14 based on an existing agreement between the Company and the PaDEP. A new facility is being constructed by Horsehead in Mooresboro, North Carolina which will use a different process for producing crude zinc oxide. Shell Corporation is considering purchasing the Monaca, Pa. plant to process shale gas liquids by the installation of a cracker to convert ethane to ethylene which can be used to produce various products. Monaca produces zinc metal but once that is shutdown the crude zinc oxide will be sold to Canadian plants for their feed material.

4. Horsehead is using four kilns at the present time to make finished products, kilns 1,2,5, and 6 (calcining only), final products are crude zinc oxide, iron rich material, and lead chloride. The plant does waelzing and calcining operations right now but is studying the possibility to discontinue the calcining operation. The Company is using four kilns right now (kilns 1,2,5, and 6). Kiln 6 does only calcining but kiln 1can do either calcining or waelzing. These kilns are heated with natural gas but they have the ability to use #2 oil fuel aswell. Each kiln has its own dedicated baghouse and all baghouses are equipped with continuous opacity monitors. The fugitive emissions baghouses capture lead chloride as this is driven off of their process and the lead chloride is sold to lead manufacturers. There are two fugitive emission control baghouses with two kilns venting to one fugitive baghouse control device. Each kiln has its own product baghouse as the product comes out as solid particulate. Kiln 6 does calcining and operates at a temperature of 1350 degrees Centigrade while the other kilns

operate at a temperature of 950 degrees Centigrade. There is only one burner used at the firing end of the kiln.

5. The material that makes its way all the way thru the kilns has a lot of iron in it and the Company refers to this material as iron rich material which is stored in a curved silo type building on the plant property. EPA took a picture of this silo during the inspection (See photo #10). Only baghouses are used for ambient air emission control in this plant. The #2 kiln uses a 618 brake horsepower engine to operate the gas evacuation fan and the #5 kiln uses a 804 brake horsepower engine to operate its fan. There are no painting lines in the facility. They are not subject to any Part 63 MACT regulations according to the Company personnel. They have 5 parts washers but no hazardous air pollutants are used in these and the servicing Company for the washers is Safety Kleen. They have no boilers in this plant either. City water is used for quenching and that is supplied by the Palmerton Municipal Authority. This plant is still considered to be a Superfund site and metal contamination of water is controlled by filtering the water through beds of iron rich material also known as Ecotight.

6. Horsehead purchased Inmetco Company as a wholly-owned subsidiary and owns four recycling plants in the country. The Company personnel stated that Horsehead now owns and operates 8 plants in the United States. The main feedstock for Horsehead's Palmerton operation is electric arc furnace (EAF) dust received from the steel industry as a hazardous waste. Fifteen to twenty steelmills supply the dust to Horsehead for their operation including 2-3 Canadian operations for daily operations of Horsehead. Building 608, controlled by a baghouse, stores the EAF dust which is mixed to provide a homogeneous feed to the kilns with a 20% zinc concentration as the target composition. Coke is also added to the feed mix for its carbon content. Both metallurgical coke and petroleum coke are mixed for this purpose and the coke is used as a reductant in the chemical reaction taking place in the kilns. The term "waelzing" comes from the German word for "tumbling" and the kilns will do waelzing or calcining. The waelzing process generates crude zinc oxide, a primary product from this Palmerton plant. The other primary product from this plant is calcine. Another operation at this plant is a metal powder production line but EPA was unable to see this equipment without respirator protection . The metal powder operation consists of melting and atomizing zinc metal to make a powder used in castings and batteries. There is an onsite laboratory for analyzing the material feed to the kilns for the proper zinc concentration. The material in and out of the Palmerton plant is carried by trucks and railcars. Kilns will be shutdown on occasion for required maintenance. There are no continuous emission monitors installed but there are continuous opacity monitors for showing compliance with the applicable regulations. The Palmerton plant is an ISO 14001certified facility as to environmental compliance by the Lloyds Register Quality Assurance auditing firm.

7. Horsehead makes regular report submissions on annual emissions of pollutants to the State but the last stack test done at the plant was in 2004 for kiln emissions. This plant does not generate its own electricity but gets electric power from PP&L but it does have one emergency generator for maintaining power to the baghouse fans for emission control. There are no gasoline tanks on the premises but they do have an NPDES permit for controlling water pollutants to the Aquaschicola Creek which empties into the Lehigh River. The permit regulates pH, flow , total zinc, lead, cadmium, total suspended solids, oil and grease to the creek. Nickel reclaimed by the Palmerton facility, as well as others, is shipped to Inmetco Company located in Ellwood City, Pa. which was purchased by Horsehead in 2011. Horsehead also owns Zochem Company located in Toronto, Canada which has a zinc melting operation. Zinc and zinc oxide are used in many products including paints, tires, and numerous other items. Fuel analysis is done by the Hawk Mountain laboratory located in Hazleton, Pa.

After looking at the records requested in the original EPA email, we then proceeded with a walkthrough of the entire operation. Pictures were taken of the plant equipment and additional information was obtained. A photo log is included at the end of this report. During the plant walkthrough , it was noted and photographed that the #6 kiln was releasing smoke/ particulate matter into the ambient air (See photo #12). Later that day, the plant manager went thru a litany of activities taken by the Company to fix the leaking #6 kiln.

After the plant walkthrough, the government representatives convened with the Company in the same conference room to hold a closeout meeting to thank the Company representatives for their cooperation and to provide the logistics on them getting the inspection report and photographs. An agreement was made for EPA to receive additional documents and those have since been delivered to EPA's Philadelphia Regional Office. EPA left the facility around 3:30 PM.

Information Received From Horsehead Already:

1. Plant Organizational Chart
2. Company Personnel Business Cards
3. A box of information has been received since the inspection and needs to be reviewed.

Information Still to be Submitted (This information may be in a box that was received recently)

Site Map, Process Flow Sheets, Air Permits, MACT Notifications, Test Reports, Annual Emission Statements (EPA did receive these from the PaDEP), Control Devices, Capital Projects, Tank List, Fuel Usage, Daily Log, Baghouse Pressure Drops, Refrigeration Equipment, Parts Cleaners, Boiler list, Title V certifications, Routine Operation Parametric Data.

Photo Log for Inspection of ZCA in Palmerton, PA on 1-29-14

Photo	Description
1	Tracks for Railcars Coming Into Plant
2	Railcar Unloading (Silo for EAF Dust)
3	Railcar Unloading Again
4	P.D. Truck in Plant
5	Coke Pile
6	#608 Building
7	Quenching Operation
8	F1 Fugitive Baghouse
9	Conveyors/Feed Bins to Kilns
10	Iron Rich Material Storage
11	#6 Kiln
12	#6 Kiln Fugitive Emissions
13	#6 Kiln Leaking Fugitive Emissions Again
14	#1 Kiln Baghouse
15	#1 Product Collector
16	#6 Product Collector
17	#2 and #5 Product Collectors
18	Metal Powders Building
19	Crude Zinc Oxide Railcars
20	Truck Weigh Station
21	Truck Weigh Station Again
22	Main Control Room
23	Kiln Picture Taken From Control Room Area